

REMARKS

The present Amendment amends claims 1-4, 7, 10, and 11, leaves claims 5-9 unchanged, cancels claim 6, and adds new claim 12. Therefore, the present application has pending claims 1-5 and 7-12.

35 U.S.C. §112 Rejections

Claim 11 stands rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicants submit that the features of the present invention, as now more clearly recited in claim 11, fully complies with the requirements of 35 U.S.C. §112. Therefore, reconsideration and withdrawal of this rejection is respectfully requested.

Claim Objections

Claim 1 stands objected to for containing an informality. As such, Applicants have amended claim 11 to more clearly recite the present invention. Therefore, reconsideration and withdrawal of this objection is respectfully requested.

35 U.S.C. §102 Rejections

Claim 11 stands rejected under 35 U.S.C. §102(a) as being anticipated by U.S. Patent Application No. 6,583,989 to Guyer et al. ("Guyer"). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention, as now more clearly recited in claim 11, are not taught or suggested by Guyer, whether taken individually or in combination with any of the

other references of record. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to claim 11 so as to more clearly describe the features of the present invention. Specifically, amendments were made to more clearly describe that the present invention is directed to a method for supporting cables in a disk array device as recited, for example, in independent claim 11.

The present invention, as recited in claim 11, provides a method for supporting cables in a disk array device. The disk array device includes a plurality of logic boards, which may be detached from a chassis. The logic boards also connect to a plurality of external devices by a plurality of cables. The method for supporting cables in the disk array device includes the steps of: disposing a plurality of movable cable supporting portions on a rail portion, where the rail portion is located in the vicinity under the logic boards and is parallel to the direction that the logic boards are arranged; and detachably supporting the cables in the movable cable supporting portions. The prior art does not teach or suggest all of these features.

The above described features of the present invention, now more clearly recited in the claims, are not taught or suggested by any of the references of record, particularly Guyer, whether taken individually or in combination with each other.

Guyer discloses a computer system including cables for interconnecting various elements of the system. However, there is no teaching or suggestion in Guyer of the method for supporting cables in a disk array device of the present invention, as recited in claim 11.

Guyer's computer system, as shown in Figs. 2, 3 and 4 , includes a frame 15 where a plurality of infrastructure connector assemblies 33 are mounted on a rear portion of the frame 15. Various sized compute elements 29 are adapted to slide into the frame 15. Each infrastructure connector assembly 33 is designed to interconnect with an associated connector assembly fixedly mounted on an individual compute element 29. The infrastructure connector assembly 33 quickly snap-connects to the associated connector assembly mounted on the compute element 29. Furthermore, each infrastructure connector assembly 33 is connected by cables to various system buses and devices in order to properly interconnect the components housed within the computer system. (See generally, column 5, lines 38-67 to column 7, lines 1-19).

The method of supporting cables in a disk array device, as recited in claim 11, includes the step of disposing a plurality of movable cable supporting portions onto a rail portion, where the rail portion is located in the vicinity under the logic boards and is parallel to the direction of the logic boards. Guyer does not disclose disposing a plurality of movable cable supporting portions onto a rail portion as in the present invention. As described in column 6, lines 6-22, Guyer discloses an infrastructure connector assembly 33, which interconnects with an associated connector assembly on an individual compute element 29. The associated connector assembly is "fixedly mounted" on the compute element 29. Furthermore the infrastructure connector assembly 33 is permanently mounted on frame 15 (see column 6, lines 66-67 to column 7, lines 1-10). In this way, when the infrastructure connector assembly 33 is

not movable, but rather is fixed in place. The “fixedly mounted” and “permanently mounted” features of Guyer are quite different from the movable feature of the present invention.

Therefore, Guyer fails to teach or suggest “disposing a plurality of movable cable supporting portions on a rail portion, wherein said rail portion is located more on the underside than in the mounting locations of said logic boards, and is parallel to the direction in which said logic boards are arranged” as recited in claim 11.

As a result, Guyer fails to teach or suggest the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the 35 U.S.C. §102(e) rejection of claim 11 is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claim 11.

35 U.S.C. §103(a) Rejections

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Guyer in view of U.S. Patent No. 4,715,571 to Soltow, et al. (“Soltow”). As indicated above, claim 6 was canceled. Therefore, this rejection with respect to claim 6 is rendered moot. This rejection with respect to the remaining claims 1-5 and 7-10 is traversed for the following reasons.

Applicants submit that the features of the present invention, as now more clearly recited in claims 1-5 and 7-10, are not taught or suggested by Guyer or

Soltow, whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Amendments were made to the claims so as to more clearly describe features of the present invention. Specifically, the claims were amended to more clearly describe that the present invention is directed to a disk array device as recited, for example, in claims 1 and 10.

Claims 1-5 and 7-9

The present invention as recited in claim 1 provides a disk array device including a chassis, and a plurality of logic boards detachably mounted to the chassis. The plurality of logic boards are adapted to connect to a plurality of external devices via a plurality of cables. The disk array device also includes a rail portion. The rail portion is disposed on the chassis and is positioned in parallel to the direction of logic boards. Further included in the disk array device is a plurality of movable cable supporting portions. These movable cable supporting portions are movably disposed on the rail portion in accordance with the number of logic boards. In addition, the disk array device includes through-holes disposed in the lower part of the chassis for passing the cables through, where the through-holes allow the cables to move in accordance with the movement of the movable cable supporting portions.

The above described features of the present invention, now more clearly recited in the claims, are not taught or suggested by any of the references of record.

More specifically, the features are not taught or suggested by either Guyer or Soltow, whether taken individually or in combination with each other.

As conceded by the Examiner, Guyer fails to teach a plurality of cable supporting portions movably disposed on a rail portion, as recited in claim 1. As discussed above with regard to the 35 U.S.C. §102 rejection, Guyer discloses “fixedly mounted” and “permanently mounted” features that are quite different from the movable feature of the present invention. With regard to the claimed rail portion, the Examiner asserts that Guyer teaches this feature. However, the Applicants disagree. The Examiner cites Fig. 4, item 43 to support his assertions that Guyer discloses a rail portion. Contrary to the Examiner’s assertions, and as described in column 17, line 21, et seq., item 43 is a rack manager. This rack manager 43 is a user interface for managing up to four computer systems. This is not a rail portion upon which movable cable supporting portions are disposed, as in the present invention.

As further conceded by the Examiner (regarding the rejection of canceled claimed 6, now incorporated into independent claim 1), Guyer fails to teach through-holes disposed in lower part of the chassis for passing cables through to the lower part of the chassis, where the through holes allow cables to move in accordance with the movement of the movable cable supporting portions, as in the present invention. There is no disclosure at all in Guyer of any through-holes disposed in the chassis.

In addition to the above described deficiencies, Guyer fails to teach a plurality of logic boards that connect to a plurality of external devices via a plurality of cables.

As described in column 6, lines 15-19 and column 7, lines 11-58, Guyer teaches that “each infrastructure connector assembly 33 is connected, such as by cables, to various system busses and devices in order to properly interconnect the components housed *within* computer system 11” (emphasis added). As further described in column 7, lines 25-31, the Guyer system “eliminates all exterior wiring for the individual compute elements 29”. In this way, Guyer teaches away from connecting to a plurality of external devices, as claimed.

Therefore, as conceded by the Examiner, Guyer fails to teach or suggest “a plurality of movable cable supporting portions, which are movably disposed on said rail portion in accordance with the number or said logic boards, and which detachably support said cables” as recited in claim 1.

Even further, and as conceded by the Examiner, Guyer fails to teach or suggest “through-holes disposed in the lower part of said chassis for passing cables through to the lower part of said chassis, wherein said through-holes allow said cables to move in accordance with the movement of said movable cable supporting portions” as recited in claim 1.

In addition, Guyer fails to teach or suggest “a plurality of logic boards, which are detachably mounted on said chassis, and which connect respectively to a plurality of external devices via a plurality of cables” as recited in claim 1.

The above noted deficiencies of Guyer are not supplied by any of the other references, particularly Soltow. Therefore, combining the teachings of Soltow with

Guyer still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Soltow teaches a device for securing a plurality of electrical conductors or cables. More specifically, Soltow teaches using a circular member, such as a ring or disk, or two ring or disk elements, to hold electrical conductors or cables in place.

The Examiner relies upon Soltow for teaching a plurality of movable cable supporting portions (citing item 1), movably disposed on a rail portion (citing item 84), where the movable cable supporting portions detachably support cables (citing items 11 and 12). Contrary to the Examiner's assertions, Soltow does not disclose these features. As described in column 5, lines 19-61, and as shown in Fig. 4, Soltow discloses a mounting ring 21 secured to a mounting element 83. The mounting element 83 is further secured to a carrier member 84. Projections 31 hold the ring 21 against axial displacement, and a hose clamp 80 with a strap 81 secures mounting ring 21 to the mounting element 83, where the strap 81 is tightened by a wing headed screw 82. As such, Soltow does not disclose where the ring 21 is movable as claimed. It should be noted that the Examiner cites item 1 to support the assertion that Soltow teaches movable cable supporting portions. However, the Examiner has not provided, and Applicants have not found, any relationship of item 1 to the alleged rail portion (Fig. 4, item 84).

The Examiner also relies upon Soltow for teaching through-holes (citing the holes formed by slot 2) disposed in lower part of the chassis (citing the chassis of Guyer) for passing cables through to the lower part of the chassis, where the

through-holes allow cables to move in accordance with the movement of the movable cable supporting portions, as in the present invention. However, Soltow does not teach a chassis, and therefore, does not teach through-holes, as claimed. The holes in the disclosed rings in Soltow do not amount to the through-holes disposed in a lower part of a chassis, where the through-holes allow cables to move in accordance with the movement of movable cable supporting portions, in the manner claimed.

Unlike the present invention, Soltow fails to teach a plurality of logic boards mounted on a chassis, and which connect to a plurality of external devices via a plurality of cables. Soltow is only directed to a device for securing a plurality of electrical conductors of cables. As such, it does not teach a plurality of logic boards connected to a plurality of external devices, as claimed.

Therefore, Soltow fails to teach or suggest “a plurality of movable cable supporting portions, which are movably disposed on said rail portion in accordance with the number of said logic boards, and which detachably support said cables” as recited in claim 1.

Even further, Soltow fails to teach or suggest “through-holes disposed in the lower part of said chassis for passing cables through to the lower part of said chassis, wherein said through-holes allow said cables to move in accordance with the movement of said movable cable supporting portions” as recited in claim 1.

In addition, Soltow fails to teach or suggest “a plurality of logic boards, which are detachably mounted on said chassis, and which connect respectively to a plurality of external devices via a plurality of cables” as recited in claim 1.

Claim 10

The present invention as described in claim 10 provides a disk array device, including: a chassis, a door portion, a plurality of channel adapter boards, and a plurality of cables connected at one end to the faces of the channel adapter boards, while the other end of the cables is connected to a host device. The disk array device further includes at least one kind of functional component, a rail portion disposed on the chassis, a plurality of movable cable supporting portions movably disposed on the rail portion, and through-holes disposed on the lower part of the chassis for allowing cables to pass through. The prior art does not teach or suggest all of these features.

The above described features of the present invention, now more clearly recited in the claims, are not taught or suggested by any of the references of record. More specifically, the features are not taught or suggested by either Guyer or Soltow, whether taken individually or in combination with each other.

As conceded by the Examiner, Guyer fails to teach a plurality of cable supporting portions movably disposed on a rail portion, as recited in claim 10. As discussed above, Guyer discloses “fixedly mounted” and “permanently mounted” features that are quite different from the movable feature of the present invention.

With regard to the claimed rail portion, the Examiner asserts that Guyer teaches this feature. However, the Applicants disagree. The Examiner cites Fig. 4, item 43 to support his assertions that Guyer discloses a rail portion. Contrary to the Examiner's assertions, and as described in column 17, line 21, et seq., item 43 is a rack manager. This rack manager 43 is a user interface for managing up to four computer systems. This is not a rail portion upon which movable cable supporting portions are disposed, as in the present invention.

As further conceded by the Examiner, Guyer fails to teach through-holes disposed in lower part of the chassis for passing cables through to the lower part of the chassis, where the through holes allow cables to move in accordance with the movement of the movable cable supporting portions, as in the present invention. There is no disclosure at all in Guyer of any through-holes disposed in the chassis.

Therefore, Guyer does not teach or suggest, "a plurality of movable cable supporting portions, which are movably disposed on said rail portion in accordance with the number of said channel adapter boards, and which support said cables in a detachable condition in units of said channel adapter boards" as recited in claim 10.

Furthermore, Guyer does not teach or suggest, "through-holes, which are disposed on the lower part of said chassis for allowing said cables supported by said movable cable supporting portions to pass through, and which enable said cables to move in accordance with the movement of said movable cable supporting portions" as recited in claim 10.

The above noted deficiencies of Guyer are not supplied by any of the other references, particularly Soltow. Therefore, combining the teachings of Soltow with Guyer still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

As discussed above, Soltow teaches a device for securing a plurality of electrical conductors or cables. More specifically, Soltow teaches using a circular member, such as a ring or disk, or two ring or disk elements, to hold electrical conductors or cables in place.

The Examiner relies upon Soltow for teaching a plurality of movable cable supporting portions (citing item 1), movably disposed on a rail portion (citing item 84), where the movable cable supporting portions detachably support cables (citing items 11 and 12). Contrary to the Examiner's assertions, Soltow does not disclose these features. As described in column 5, lines 19-61, and as shown in Fig. 4, Soltow discloses a mounting ring 21 secured to a mounting element 83. The mounting element 83 is further secured to a carrier member 84. Projections 31 hold the ring 21 against axial displacement, and a hose clamp 80 with a strap 81 secures mounting ring 21 to the mounting element 83, where the strap 81 is tightened by a wing headed screw 82. As such, Soltow does not disclose where the ring 21 is movable as claimed. It should be noted that the Examiner cites item 1 to support the assertion that Soltow teaches movable cable supporting portions. However, the Examiner has not provided, and Applicants have not found, any relationship of item 1 to the alleged rail portion (Fig. 4, item 84).

The Examiner also relies upon Soltow for teaching through-holes (citing the holes formed by slot 2) disposed in lower part of the chassis (citing the chassis of Guyer) for passing cables through to the lower part of the chassis, where the through-holes allow cables to move in accordance with the movement of the movable cable supporting portions, as in the present invention. However, Soltow does not teach a chassis, and therefore, does not teach through-holes, as claimed. The holes in the disclosed rings in Soltow do not amount to the through-holes disposed in a lower part of a chassis, where the through-holes allow cables to move in accordance with the movement of movable cable supporting portions, in the manner claimed.

Therefore, Soltow fails to teach or suggest “a plurality of movable cable supporting portions, which are movably disposed on said rail portion in accordance with the number of said channel adapter boards, and which support said cables in a detachable condition in units of said channel adapter boards” as recited in claim 10.

Even further, Soltow fails to teach or suggest “through-holes, which are disposed on the lower part of said chassis for allowing said cables supported by said movable cable supporting portions to pass through, and which enable said cables to move in accordance with the movement of said movable cable supporting portions” as recited in claim 10.

Both Guyer and Soltow suffer from the same deficiencies relative to the features of the present invention as recited in the claims. Therefore, combining the teachings of Guyer and Soltow in the manner suggested by the Examiner does not

render obvious the features of the present invention as now more clearly recited in claims 1-5 and 7-10. Accordingly, reconsideration and withdrawal of the 35 U.S.C. 103(a) rejection of claims 1-5 and 7-10 is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references used in the rejection of claims 1-5 and 7-10.

Claim 12 (new)

The present Amendment adds new claim 12. Claim 12 incorporates the features of independent claim 1 and dependent claims 2 and 5, as currently amended. As such, Applicants submit that new claim 12 does not include any new matter and is fully supported by the specification.


In view of the foregoing amendments and remarks, Applicants submit that claims 1-5 and 7-12 are in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

U.S. Application No. 10/806,098

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger, Malur & Brundidge, P.C., Deposit Account No. 50-1417 (referencing attorney docket no. 1309.43693X00).

Respectfully submitted,

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